Geophysical Research Abstracts,
Vol. 10, EGU2008-A-01427, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-01427
EGU General Assembly 2008

Unmasking the 1349 earthquake fault: paleoseismological indications from the Latium-Campania border (central Italy)

P. Galli (1,2), G. Naso (1), S. Piscitelli (3), A. Giocoli (3), S. Hailemikael (4), E. Rizzo (3)

(1) Dipartimento Protezione Civile, Rome, Italy, (2) CNR-IGAG, Rome, Italy, (3) CNR-IMAA, Potenza, Italy, (4) Università "La Sapienza", Rome, Italy

The September 9, 1349 earthquake is one of the most catastrophic and extensive event of central Apennine. Actually, at least three mainshocks struck a vast region of Molise-Latium-Abruzzi regions; collapses involved also the far monumental buildings of Rome, as described even by the famous poet and humanist Petrarca. The southern-most shock (Mw$\sim$6.7) occurred at the border between southern Latium and western Molise, razing to the ground, amongst the others, the towns of Isernia, Venafro and Cassino, and devastating the Montecassino Abbey. Analogously to others medieval catastrophic sequences (e.g., Dec. 1456, Mw$\sim$6.5-7.0), this earthquake has not yet been associated to a certain seismogenic source; thus, it still represents a thorn in the flesh of earthquake geologists. Nowadays, we carried out paleoseismological analyses across the Aquae Iuliae fault (a poorly known N140 Late Pleistocene normal structure), which showed repeated surface ruptures during the late Holocene, the last one excellently fitting with the 1349 event (both in terms of dating and of rupture dimension). On the other hand, preliminary archaeoseismic analyses account also for the faulting of an Augustean aqueduct. The amount of the apparent offset of the aqueduct across the fault trace yields the existence of other surface faulting event(s) during the Roman-High Middle Age period. Therefore, while we are trying to ascertain whether they should be associated to known (346 AD? 848 AD?), or unknown earthquakes of the region, a possible implication is that the $\sim$20-km-long Aquae Iuliae fault is characterized by high slip-rates and short recurrence time. This fact is in agreement

both with the similar behavior of the neighbor N-Matese fault, and with recent GPS analyses showing high extension-rates in this area.